NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE SPECIFICATION

WATER HARVESTING CATCHMENT

(no.)
CODE 636

SCOPE

This specification covers the construction of water harvesting catchments. Construction shall be in accordance with the construction plans and these specifications.

INSTALLATION

Site preparation. The work area shall be cleared of all trees, stumps, roots, brush, rocks, debris, and vegetation as necessary to permit proper installation of the system. Waste material shall be disposed of in an environmentally acceptable manner.

Areas where fill will be placed must be thoroughly scarified before placement of the fill material. These areas shall have moisture added or be compacted if necessary so the first layer of fill material can be compacted and bonded to the foundation.

Catchment Area

Subgrade. The area shall be compacted as necessary to provide adequate support to the planned system.

If the subgrade is coarse-textured and open after preparing and compacting, or in rocky soils, a two-inch cushion layer of sand or fine-grained soil should be applied.

Where needed, an effective sterilant shall be applied to the subgrade at a rate recommended by the manufacturer.

Surfacing materials. Surfacing materials shall be those specified in the construction plans, and shall meet specified quality requirements.

Surfacing materials shall be applied according to the manufacturer's recommendations. All materials shall meet specified quality requirements.

The water harvesting catchment shall be installed to line and grades as shown on the plans.

The completed job shall present a workmanlike appearance. Fencing and cover to control erosion and pollution shall be established as needed.

Earth or Rock Storage Basin

Excavation. Any required excavations shall be to the lines and grades as shown on the plans or as staked in the field. To the extent they are suitable, excavated materials are to used in the permanent fill.

Earthfill embankments. Earthfill embankments shall be constructed to the lines, grades and elevations shown on the drawings or as staked in the field.

The material placed in the fill shall be free of sod, roots, stones over 6 inches in diameter and other objectionable material.

The distribution and gradation of materials shall be such that there will be no lenses, pockets, streaks, or layers of materials differing substantially in texture or gradation from the surrounding material. Where it is necessary to use materials of varying texture and gradation, the more impervious material shall be placed in the center portion of the embankment.

The placing and spreading of fill material shall be started at the lowest point of the foundation. The fill shall be brought up in horizontal layers not to exceed 8 inches in thickness so that adequate compaction can be obtained. The fill shall be constructed in continuous horizontal layers.

The moisture content of the fill material shall be such that compaction can be obtained. The minimum moisture content of fill material shall be such that, when kneaded in the hand, the fill material will form a ball which does not readily separate. The maximum moisture content is when conditions are too wet for efficient use of hauling, spreading, or compaction equipment. Material that is too wet shall be dried, and material that is too dry shall have water added and mixed until it can be compacted.

Each layer of fill shall be adequately compacted by complete coverage by the hauling and spreading equipment. Special compaction equipment such as a sheep's-foot roller may be used to obtain adequate compaction if compaction method or minimum density are specified on the plans.

Selected backfill material shall be placed around structures and pipe conduits at the same rate on all sides to prevent damage from unequal loading.

Fill adjacent to structures and pipe conduits shall be compacted to a density equivalent to that of the surrounding fill by means of hand tamping or manually-directed power tampers or plate vibrators. Compaction adjacent to concrete structures will not be started until the concrete has attained strength enough to support the load.

Rockfill embankments. Rockfill embankments shall be constructed to the lines, grades and elevations shown on the plans or as staked in the field.

The material placed in the fill shall be free of all sod, roots, trees or other objectionable material. The material shall be placed in approximately horizontal layers not more than two (2) feet in thickness. It shall be placed in a manner to provide a reasonably homogeneous stable fill that contains no segregated pockets of small fragments or large void spaces caused by bridging of the larger fragments. Each layer of rockfill shall be compacted by at least 4 passes over the entire surface of the track of a crawler-type tractor.

Outlet pipes. Pipe materials shall be as shown on the plans. The pipe shall be firmly and uniformly bedded throughout its length and shall be installed to lines and grades as shown on the plans.

Concrete structures. For small jobs the concrete mix will be: 1 sack cement (1 cubic foot by loose volume), 2 cubic feet sand, 3 1/2 cubic feet of gravel and 6 gallons of water. For larger jobs concrete will be proportioned and mixed to produce a 28-day strength of 3,000 pounds per square inch or greater. Concrete should be cured by keeping exposed surfaces wet for a minimum of 7 days or by applying an acceptable curing compound. Reinforcing steel is to be placed as indicated on the plans and held securely in place during concrete placement. Subgrades and forms are to be installed to lines and grades and the forms are to be mortar tight and unyielding as the concrete is placed.

CONSTRUCTION OPERATIONS

Construction operations shall be carried out in such a manner and sequence that erosion and air and water pollution are minimized and held within legal limits.

SAFETY

Landowners or operators, sponsoring organizations, and contractors are liable for damage to utilities and damage resulting from disruption of service caused by construction activities. The Natural Resources Conservation Service makes no representation on the existence or nonexistence of any utilities. Absence of utilities on plan drawings is not assurance that no utilities are present at the site.

It is the responsibility of the landowner or operator to determine if there are buried or overhead utilities in the vicinity of the proposed work. They should take proper procedures to insure that the utilities will not be jeopardized and that equipment operators and others will not be injured during construction operations.